

Amendments to Claims

1. (Cancelled)
2. (Cancelled)
3. (Cancelled)
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28. (Cancelled)
29. (Cancelled)
30. (Cancelled)
31. (Cancelled)
32. (Cancelled)
33. (Currently Amended) An apparatus for forming applying particulate material on a photopolymerizable element useful as a flexographic printing plate comprising:

means for forming a layer of a molten photopolymerizable material onto a support;

means for applying particulate material onto an exterior surface of the photopolymerizable layer opposite the support; and

means for providing relative movement between the layer of photopolymerizable material and the means for applying particulate material, wherein the exterior surface of the photopolymerizable layer has area portions each of which experience the same or substantially the same particulate application conditions.

34. (Original) The apparatus of Claim 33 wherein the means for applying particulate material comprises an application assembly comprising:

an applicator pad having surface portions for contacting the particulate material to the exterior surface of the photopolymerizable layer so that each of the area portions of the exterior surface experience the same or substantially the same particulate application conditions by contacting all or substantially all of the surface portions of the pad.

35. (Original) The apparatus of Claim 34 wherein the applicator pad is cylindrically-shaped.

36. (Original) The apparatus of Claim 35 wherein the application assembly further comprises:

means for rotating, oscillating, or both rotating and oscillating the applicator pad.

37. (Original) The apparatus of Claim 34 wherein the application assembly further comprises:

a dispensing assembly for supplying and dispensing the particulate material to the applicator pad.

38. (Original) The apparatus of Claim 33 wherein the support is a cylindrically-shaped sleeve.

39. (Original) The apparatus of Claim 37 further comprising means for rotating the sleeve.

40. (Original) The apparatus of Claim 33 wherein the support is a cylindrically-shaped sleeve having an axial length and the means for applying the particulate material comprises an application assembly comprising an application pad having an axial length that is shorter than the axial length of the support.

41. (Original) The apparatus of Claim 33 wherein the support is a cylindrically-shaped sleeve having an axial length and the means for applying the particulate material comprises an application assembly comprising an application pad having an axial length that is equal to or longer than the axial length of the support.

42. (Original) The apparatus of Claim 33 further comprising:

means for altering the temperature of the exterior surface of the photopolymerizable layer.

43. (Original) The apparatus of Claim 42 wherein the means for altering the temperature is by heating and is selected from the group of conduction, convection, radiation, or combinations thereof.

44. (Original) The apparatus of Claim 42 wherein the means for altering the temperature is by cooling.

45. (Original) The apparatus of Claim 33 further comprising:
means for altering temperature of the photopolymerizable layer by heating or cooling the support side of the layer.

46. (Original) The apparatus of Claim 33 wherein the support is a cylindrically-shaped sleeve having a longitudinal axis and the means for forming a layer of photopolymerizable material comprises:

supplying a substantially molten stream of the photopolymerizable material onto the sleeve;

providing relative axial movement between the sleeve and the supply of photopolymerizable material along the longitudinal axis of the sleeve;

calendering the molten photopolymerizable material on the sleeve by metering with at least one rotating calender roll the photopolymerizable material to have a substantially constant thickness on the sleeve and rotating the sleeve to polish an outer circumferential surface of the material to a seamless uniform state, thereby forming a seamless photopolymerizable layer on the sleeve.

47. (Original) The apparatus of Claim 33 wherein the forming means further comprises:

an extruder station for providing the photopolymerizable material in a molten state onto the support; and

a calender assembly comprising at least one calendering roll for metering the molten photopolymerizable material to form the layer on the support and polish the exterior surface of the layer.

48. (Original) The apparatus of Claim 33 further comprising:
an assembly for loading the support on to a mandrel and unloading the photopolymerizable element from the mandrel.

49. (Original) The apparatus of Claim 33 further comprising:
a loading assembly for loading the support onto a mandrel; and
an unloading assembly for unloading the photopolymerizable element from the mandrel.

50. (Original) An apparatus for applying particulate material on a photopolymerizable element useful as a flexographic printing plate comprising:

means for mounting the photopolymerizable element having a layer of photopolymerizable material on a support;

means for applying the particulate material onto an exterior surface of the photopolymerizable layer opposite the support; and

means for providing relative movement between the photopolymerizable layer and the means for applying the particulate material, wherein the exterior surface of the photopolymerizable layer has area portions each of which experience the same or substantially the same particulate application conditions.

51. (Original) The apparatus of Claim 50 wherein the means for applying particulate material comprises an application assembly comprising:

an applicator pad having surface portions for contacting the particulate material to the exterior surface of the photopolymerizable layer so that each of the area portions of the exterior surface experience the same or substantially the same particulate application conditions by contacting all or substantially all of the surface portions of the pad.

52. (Original) The apparatus of Claim 51 wherein the applicator pad is cylindrically-shaped.

53. (Original) The apparatus of Claim 51 wherein the application assembly further comprises:

means for rotating, oscillating, or both rotating and oscillating the applicator pad.

54. (Original) The apparatus of Claim 51 wherein the application assembly further comprises:

a dispensing assembly for supplying and dispensing the particulate material to the applicator pad.

55. (Original) The apparatus of Claim 50 wherein the support is a cylindrically-shaped sleeve.

56. (Original) The apparatus of Claim 50 further comprising:

means for altering the temperature of the exterior surface of the photopolymerizable layer.

57. (Original) The apparatus of Claim 56 wherein the means for altering the temperature is by heating the exterior surface to at least 30 °C and is selected from the group of conduction, convection, radiation, or combinations thereof.

58. (Original) The apparatus of Claim 56 wherein the means for altering the temperature is by cooling.

59. (Original) The apparatus of Claim 50 wherein the support is a cylindrically-shaped sleeve and further comprises means for rotating the sleeve.

60. (Original) The apparatus of Claim 59 wherein the sleeve can be rotated at the same or different rotational speed of the applicator pad.

61. (Original) An apparatus for applying particulate material on a photopolymerizable element useful as a flexographic printing plate comprising:

means for mounting the photopolymerizable element having a layer of photopolymerizable material on a cylindrical support;

means for applying the particulate material onto an exterior surface of the photopolymerizable layer opposite the support, wherein the means for applying comprises an applicator assembly having a cylindrical applicator pad; and

means for heating the exterior surface of the photopolymerizable layer.